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High-level meeting of the General Assembly as a contribution to the International Year of Biodiversity

Note by the Secretary-General

The Secretary-General has the honour to transmit to the General Assembly a background paper for the high-level meeting of the General Assembly as a contribution to the International Year of Biodiversity, to be held on 22 September 2010.

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Background paper for the high-level meeting of the General Assembly to be convened on 22 September 2010 as a contribution to the International Year of Biodiversity

I. Introduction

1. In its resolution 61/203, the General Assembly declared 2010 the International Year of Biodiversity and in resolution 63/219, it decided, as a contribution to the International Year, to convene a high-level meeting of the General Assembly at its sixty-fifth session, with the participation of Heads of State, Governments and delegations.

2. In its resolution 64/203, the Assembly decided that the one-day high-level meeting would be convened as close as possible to the opening of the general debate of the sixty-fifth session of the General Assembly. It encouraged all Member States to be represented at the highest possible level, including by Heads of State or Government, and decided that the meeting would be structured around an opening plenary meeting followed by thematic panels in the morning and afternoon, organized within existing resources, and would address in a balanced manner the three objectives of the Convention on Biological Diversity.

3. In the same resolution, the General Assembly further decided that the high-level meeting would be held on Wednesday, 22 September 2010 and would consist of an opening plenary meeting from 9 a.m. to 10 a.m., consecutive thematic panels from 10 a.m. to 1 p.m. and from 3 p.m. to 5 p.m., and a closing plenary meeting from 6 p.m. to 7 p.m., taking into account that the plenary meeting of the high-level plenary meeting of the sixty-fifth session of the General Assembly is scheduled to meet from 3 p.m. to 6 p.m. (See decision 64/555.)

4. In resolution 64/203 also, the Assembly decided that the meeting would be chaired by the President of the General Assembly and requested the President to prepare a summary of the discussions held during the high-level meeting for presentation at the closing plenary and transmission, under his authority, to the tenth session of the Conference of the Parties to the Convention on Biological Diversity, to be held in Nagoya, Japan in October 2010, as a contribution to raising awareness of the three objectives of the Convention.

5. In paragraph 23 (f) of resolution 64/203, the Assembly requested the Secretary-General to prepare a background paper for the high-level meeting. The present paper has been prepared in response to that request. It is based on inputs provided by the Bureau of the Conference of the Parties to the Convention on Biological Diversity.

II. Overview

6. The Convention on Biological Diversity is one of the key international instruments for the conservation and sustainable use of biological resources and the fair and equitable sharing of benefits arising from the use of genetic resources. Several United Nations agencies and programmes also contribute significantly to activities related to the conservation and sustainable use of biodiversity and the sharing of its benefits. The United Nations Environment Programme (UNEP) plays a

role in addressing biodiversity challenges and provides the Secretariat to the Convention on Biological Diversity and to other conventions.

7. One hundred and ninety-two States and one regional economic integration organization have ratified the Convention.

8. At the World Summit on Sustainable Development, in 2002, States committed themselves to pursue a more efficient and coherent implementation of the three objectives of the Convention and the achievement by 2010 of a significant reduction in the current rate of loss of biodiversity at the global, regional and national levels as a contribution to poverty alleviation and to the benefit of all life on Earth (the "2010 biodiversity target"), noting that that would require action at all levels, including the implementation of national biodiversity strategies and action plans and the provision of new and additional financial and technical resources to developing countries.

9. The commitment to achieving the 2010 biodiversity target was reiterated by the World Summit in 2005 and in 2006 the target was incorporated in the Millennium Development Goals as part of Goal 7 on environmental sustainability.

10. One hundred and seventy Parties to the Convention have finalized their national biodiversity strategies and action plans or equivalent instruments.

11. The tenth meeting of the Conference of the Parties to the Convention on Biological Diversity will be held in Nagoya, Japan from 18 to 29 October 2010. In many ways this will be the most important meeting of the Convention so far: one that will establish the strategic framework and programme for the next phase of implementation. It will review the experience of implementing the Convention, the progress achieved by Parties in implementing their national biodiversity strategies and action plans, and progress towards the 2010 biodiversity target. It will adopt an updated strategic plan and a programme of work for the period to 2020, further develop the strategy for resource mobilization and review the effectiveness of the financial mechanism. It is expected to adopt an international regime on access to genetic resources and benefit-sharing.

12. The Nagoya meeting is expected to respond to the view of many that the phase since the entry into force of the Convention in 2003 has resulted in comprehensive sets of scientific and policy guidance for the Parties and that the need now is to support countries in effectively implementing this guidance at the national level, such that the three objectives of the Convention — the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of genetic resources — can be achieved. The meeting will thus set the direction and priorities of the Convention, and of national implementation, for the next decade or more.

13. The Environment Management Group of the United Nations contributes to United Nations-wide action on issues related to the environment in general and biodiversity in particular. Through the Environment Management Group, a report on the biodiversity targets is currently being prepared for the Nagoya meeting of the Conference of the Parties to the Convention on Biodiversity that compiles action taken by United Nations agencies to reduce the rate of loss of biodiversity and future action for the conservation of biodiversity.

14. Ensuring that policies are informed by credible, relevant and legitimate scientific information is another key area that is attracting growing attention from the international community. In this regard, an agreement was reached among Governments at the meeting held in Busan, Republic of Korea, in June 2010 to establish a new science-policy platform on biodiversity and ecosystem services.

15. The third edition of the *Global Biodiversity Outlook*, published in May 2010, provides the latest scientific assessment of the status and trends of biodiversity. It paints a worrying picture, with serious implications for the well-being, development prospects, security and even the very survival of human societies in all parts of our planet. Among other issues, it is now clear that the missions of keeping climate change within limits that minimize the risks to human societies and of avoiding further loss of the biodiversity that provides those ecosystem services upon which human societies depend are, in key aspects, two sides — the scientific and the political — of the same coin.

16. The Millennium Ecosystem Assessment, published in 2005, found that human actions are depleting the Earth's natural capital, putting such strain on the environment that the ability of the planet's ecosystems to sustain future generations can no longer be taken for granted. At the same time, the assessment shows that with appropriate actions it is possible to reverse the degradation of many ecosystem services over the next 50 years, but the changes in policy and practice required are substantial and are not currently under way.

17. Biological diversity underpins ecosystem functioning and the provision of ecosystem services essential for human well-being. Its continued loss, therefore, has major implications for current and future human well-being. However, the Millennium Ecosystem Assessment found that 15 of the 24 ecosystem services evaluated are degraded and that this threatens to undermine progress towards the Millennium Development Goals.

18. As a consequence of human actions, species are being lost at a rate that is estimated to be up to 100 times the natural rate of extinction. In the past century, 35 per cent of mangroves, 40 per cent of forests and 50 per cent of wetlands have been lost. Change in the abundance and distribution of species, compounded by climate change, has serious consequences for human societies and is moving ecosystems ever closer to thresholds, or "tipping points", beyond which their services will be seriously undermined. Such tipping points could include:

- The dieback of large areas of the Amazon forest, due to the interactions of climate change, deforestation and fires, with consequences for the global climate, regional rainfall, regional agricultural production and widespread species extinctions
- The shift of many freshwater lakes and other inland water bodies to eutrophic or algae-dominated states, caused by the build-up of nutrients and leading to widespread fish kills and loss of recreational amenities
- Multiple collapses of coral reef ecosystems, due to a combination of ocean acidification, warmer water leading to bleaching, overfishing and nutrient pollution, and threatening the livelihoods of hundreds of millions directly dependent on coral reef resources

19. The *Global Biodiversity Outlook* concludes that the 2010 biodiversity target has not been met at the global level. None of the 21 sub-targets accompanying the

overall target of significantly reducing the rate of biodiversity loss by 2010 can be said definitively to have been achieved globally, although some have been partially or locally achieved. Of those biodiversity indicators for which global data are available, 10 show negative trends, three show no clear trend but provide grounds for concern, and three show positive developments. The diversity of species, diversity within species (genetic diversity) and diversity of ecosystems continue to decline globally. The five principal pressures directly driving biodiversity loss (habitat change, overexploitation, pollution, invasive species and climate change) are either constant or increasing in intensity.

20. The *Global Biodiversity Outlook* presents some stark choices for human societies in the coming decades. The diversity of living things on the planet continues to be eroded as a result of human activities. The pressures driving the loss of biodiversity show few signs of easing, and in some cases are escalating. The consequences of current trends are much worse than previously thought and place in doubt the continued provision of vital ecosystem services. The poor stand to suffer disproportionately from potentially catastrophic changes to ecosystems in the coming decades, but ultimately all groups in all societies stand to lose.

21. On the other hand, the options for addressing the crisis are wider than in earlier projections. Determined action to conserve biodiversity and use it sustainably will reap rich rewards. It will benefit people in many ways, through better health, greater food security and less poverty. It will safeguard the variety of nature, an objective justified in its own right according to a range of belief systems and moral codes. It will help to slow climate change by enabling ecosystems to absorb and store more carbon, and it will help people adapt to climate change by adding resilience to ecosystems and making them less vulnerable.

22. The maintenance and restoration of natural infrastructure can provide economic gains worth trillions of dollars a year. The latest science suggests ever more strongly that better management, conservation and sustainable use of biodiversity is a prudent and cost-effective investment in social and economic security, and in risk reduction for the global community. The *Global Biodiversity Outlook* analyses why efforts to date have not been sufficient to reduce significantly the rate of biodiversity loss and concludes that concerted and targeted responses, with action applied at appropriate levels to address both the direct pressures on biodiversity and their underlying causes, can in the long term stop or even reverse the continued loss of the variety of life on Earth.

23. The action taken over the next two decades will determine whether the relatively stable and benign environmental conditions on which human civilization has depended for the past 10,000 years will continue beyond this century. If we fail to use this opportunity, many ecosystems on the planet will move into new, unprecedented states in which their capacity to provide for the needs of present and future generations is highly uncertain.

III. High-level meeting

24. The high-level meeting provides an opportunity for Member States, together with United Nations funds, programmes, specialized agencies and regional commissions, as well as intergovernmental organizations, biodiversity-related multilateral environmental agreements and relevant observers, to consider, on the

basis of the latest science, the status and trends of biodiversity, the risks that the continued loss of biodiversity represent for human well-being, development and security, and the necessary strategies and measures to reduce such risks.

25. The meeting will also provide the opportunity for heads of State and Government and of United Nations and intergovernmental bodies to provide the necessary high-level support for a sustained and coordinated global response to these biodiversity challenges and guidance to the relevant organizations and agreements.

26. In order to prepare the high-level meeting, an informal brainstorming meeting will be held in Geneva on 1 and 2 September 2010, at the invitation of the Government of Switzerland, with representatives of countries invited to co-chair the panels. The informal brainstorming session will be followed on 3 September 2010 by a ministerial meeting of the 11 States that have presided or who will preside the Conference of the Parties to the Convention, namely, the Bahamas, Indonesia, Argentina, Slovakia, Kenya, the Netherlands, Malaysia, Brazil, Germany, Japan and India. The conclusions of the meetings in Geneva will be disseminated in due course.

IV. Format of the high-level meeting

27. As noted above, the General Assembly has decided that the high-level meeting will consist of an opening plenary meeting, consecutive thematic panels and a closing plenary meeting. The annex contains the proposed organization of the meeting.

28. The thematic panels will consider four core strategic and political issues, the successful resolution of which will allow the Nagoya meeting to pave the way for a phase of focused implementation of the Convention, thereby providing impetus for achieving its three objectives.

29. These core issues are: framing the post-2010 biodiversity strategy; ensuring the means for implementing the post-2010 biodiversity strategy; deriving benefits from biodiversity for development and poverty alleviation; and ensuring that measures to meet the objectives of the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change are mutually supportive and reinforcing.

Topic 1
Framing the post-2010 biodiversity strategy

30. Action is urgently needed to avoid reaching tipping points or critical thresholds that will lead to irreversible loss of biodiversity and ecosystem services, with dangerous consequences for human well-being.

31. The 2010 biodiversity target has inspired action at many levels. However, such action has not been on a scale sufficient to address the pressures on biodiversity. Moreover, there has been insufficient integration of biodiversity issues into broader policies, strategies and programmes, and therefore the underlying drivers of biodiversity loss have not been significantly reduced.

32. The science base is becoming more robust and we have a better understanding than we did before of the relationship between biodiversity and ecosystem services, and of how biodiversity is needed to maintain resilience and provide multiple services for a range of beneficiaries. However, despite greater understanding of the linkages between biodiversity, ecosystem services and human well-being, the value of biodiversity is still not reflected in broader policies and incentive structures.

33. The *Global Biodiversity Outlook* provides a peer-reviewed science-based assessment of the progress towards the 2010 biodiversity target, and future challenges. Based on 120 national reports submitted by Parties to the Convention on Biodiversity, the *Outlook* demonstrates that the 2010 biodiversity target has not been achieved. The diversity of genes, species and ecosystems continues to decline, as the pressures on biodiversity remain constant or increase in intensity as a result of human action.

34. Unless urgent action is taken to reverse current trends, a wide range of services derived from ecosystems, underpinned by biodiversity, could rapidly be lost. While the harshest impacts will fall on the poor, thereby undermining efforts to achieve the Millennium Development Goals, no one will be immune from the impacts of the loss of biodiversity. If current trends persist during the present century this will have drastic consequences for human societies, as several tipping points or thresholds will be crossed.

35. If we fail to agree now on how to reverse these trends, many ecosystems on the planet could move into new, unprecedented states in which the capacity to provide for the needs of present and future generations is highly uncertain.

36. In Nagoya, the Conference of the Parties will adopt a revised and updated strategic plan for the Convention for the period 2011-2020.

37. This strategic plan needs to enable quicker and more effective implementation of the Convention on Biological Diversity and facilitate a more focused and targeted approach. It should build on the previous plan and the lessons learned from its implementation. It should also provide a short and simple focus for the Convention.

38. The strategic plan should set out a global vision that constitutes our collective aspiration for the biological diversity of the planet. It should provide a flexible framework for enhancing coherence in the implementation of the provisions of the Convention and other biodiversity-related conventions and of the decisions of the Conferences of the Parties, including the programmes of work, and for setting and achieving the national commitments by Parties which are collectively necessary to achieve this aspiration.

39. The objectives of the Convention and other biodiversity-related conventions can only be met through effective and coherent national action, including at the local level, and national biodiversity strategies and action plans need to be revised and adopted as Government-wide policy instruments, with strengthened implementation mechanisms and institutions, as the national framework for achieving the mission and targets of the post-2010 strategic plan.

40. In order to increase the broad ownership of work at all levels to achieve the objectives of the various conventions, there is a need for better integration of the work programmes of United Nations agencies, multilateral environmental agreements and other processes.

41. It is therefore important to translate the vision, mission and targets of the strategic plan into instruments that are appropriate to and will work at the national level. Parties will need to establish their own measurable biodiversity targets or commitments, consistent with both the global targets in the strategic plan and their own national needs, priorities and assessment of threats, and incorporate them into revised and updated national biodiversity strategies.

42. The strategic plan will also serve as the basis for the development of communication, education and public-awareness action to explain the importance of biodiversity in providing essential ecosystem services, and the risks to human well-being that the loss of these services represents. This is an area where scientists and the biodiversity community have not been successful in explaining the potential consequences of the biodiversity crisis to policymakers, opinion formers and the general public.

43. *Questions for discussion*

- *As Head of State or Government what is your biodiversity vision, for your country, your region and globally?*
- *What lessons need to be learned from the experience of the 2010 biodiversity target and what guidance can you provide to the negotiators at Nagoya to ensure that the new strategic plan for the Convention is comprehensive, ambitious and achievable?*

Topic II
Ensuring the means for implementing the post-2010 biodiversity strategy

44. The Convention on Biological Diversity needs to shift its focus towards an emphasis on supporting and facilitating implementation, especially at the national and local levels.

45. Most countries report that they lack sufficient human and financial resources for the implementation of the Convention, as well as access to the information they need and the means to analyse it. At the same time, there is, in fact, a wealth of information, expertise and experience among the Parties to the Convention and partner organizations. The challenge is to marshal this knowledge to support implementation of the Convention.

46. There is a need for increased financial resources for effective implementation of the Convention, including innovative financing and resource mobilization mechanisms. It will be necessary to ensure the alignment of the financial mechanism with the strategic plan and enable it to provide adequate, predictable and timely support to the implementation needs of the Parties.

47. While most activities to implement the Convention are carried out at the national level, the Convention bodies have a key role to play in reviewing implementation, promoting cooperation to address common issues and ensuring that effective support mechanisms are provided for capacity development; knowledge generation, use and sharing; and access to financial and other resources.

48. For the Convention bodies to play this role and for the Parties to be able to effectively access the necessary support mechanisms, enhanced monitoring and review of the implementation of the Convention is also required. Robust assessments of status and trends will require continued improvement in national

reporting. The proposed Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, and the Biodiversity Observation Network that is under development may represent important contributions. The Environment Management Group is preparing an analysis of how the various United Nations agencies can support countries in the implementation of the post-2010 targets.

49. Other needs include more efficient and innovative sharing of best practice, tools, methodologies, scientific knowledge and experience; technology transfer under the terms envisaged by the Convention; and greater engagement of and coordinated action by international and regional organizations whose mandates cover sectors that use or impact on biodiversity issues, in order to address the drivers of biodiversity loss.

50. Some Parties have suggested that enhanced mechanisms to ensure compliance with implementation and with commitments to provide the necessary resources are required.

51. In February 2009, an Issue Management Group on the post-2010 biodiversity target was established under the Environmental Management Group. The main conclusion of the report of the Environmental Management Group on the post-2010 target will be made available to participants.

52. *Questions for discussion*

- *What are the human, institutional, scientific and financial resources that countries need in order to fully implement the Convention and what mechanisms are needed to ensure that each country has access to the resources it needs?*
- *How will you ensure that the post-2010 biodiversity strategy is reflected in your national biodiversity strategy and action plan, including a set of measurable national biodiversity targets?*
- *How will you ensure that the post-2010 biodiversity strategy is reflected in your national and local development priorities and that biodiversity will be mainstreamed throughout government and in all sectors of society and the economy?*

Topic III
Deriving benefits from biodiversity for development and poverty alleviation

53. The Convention recognizes that "economic and social development and poverty eradication are the first and overriding priorities of developing countries" and that "conservation and sustainable use of biodiversity is of critical importance for meeting the food, health and other needs of the growing world population, for which purpose access to and sharing of both genetic resources and technologies are essential".

54. The extent of linkages between the ecosystem services provided by biodiversity and the development goals of ending poverty, hunger and disease and improving health is deep and broad. Declining provision of ecosystem services resulting from biodiversity loss has severe consequences for human societies and economies and for the future of life on the planet. Poor people are particularly vulnerable to these consequences as they are directly dependent on biodiversity for their day-to-day survival. To take just one example, an estimated one billion people

in developing countries depend upon fish as their primary source of food. However, 80 per cent of the world's fisheries are fully or over-exploited.

55. Recognition of the linkages between the ecosystem services provided by biodiversity and development goals is the reason for the integration of the 2010 biodiversity target into Goal 7 of the Millennium Development Goals.

56. The existence of a variety of ecosystems, of different species and of genetic diversity is essential to maintaining human health, in terms of food security and adequate nutrition, resistance to infectious and vector-borne diseases, mental health and reduction of disaster risk. Not least, biodiversity provides the material from which all traditional medicines and many synthetic drugs are derived.

57. Crop genetic diversity is humanity's key to maintaining crop resistance to pests and diseases, and to adapting agricultural systems to climate change. As the basis for the development of new crop varieties, and for the improvement of existing ones, genetic diversity will become increasingly important to food security. Our ability to continue to grow enough food will depend on how we manage agricultural ecosystems and crop diversity at the species, genetic and landscape levels. Beyond quantitative considerations, the diversity of local edible vegetables, fruit and tubers and of traditional varieties of crops, which often have higher nutritional value than modern varieties, is vital in assuring good health.

58. Changes to and disruption of ecosystems can leave people more vulnerable to disease as the habitats and life cycles of disease-causing organisms change. Human impacts on the environment have been associated with outbreaks of malaria, dengue haemorrhagic fever, Severe Acute Respiratory Syndrome (SARS), Ebola haemorrhagic fever, Marburg haemorrhagic fever, Hantavirus pulmonary syndrome, avian influenza and echinococcus.

59. The Economics of Ecosystems and Biodiversity (TEEB) study[1] notes that the cost of biodiversity losses is felt on the ground but can go unnoticed at the national and international levels because the true value of natural capital is missing from decisions, indicators, accounting systems and prices in the market. The lack of market prices for ecosystem services and biodiversity means that the benefits we derive from these goods (often public in nature) are usually neglected or undervalued in decision-making. This in turn leads to actions that not only result in biodiversity loss, but also impact on human well-being.

60. This provides a strong case for broad policy action. Put simply, making the benefits of biodiversity and ecosystem services visible to economies and society is necessary to pave the way for more efficient policy responses.

61. Perverse subsidies and the lack of monetary value attached to hugely important services provided by ecosystems have been important factors contributing to the loss of biodiversity. Through regulation and other measures, markets can and must be harnessed to create incentives to safeguard and strengthen, rather than to deplete, our natural infrastructure. The restructuring of economies and financial systems following the global recession provides an opportunity for such changes to be made. Early action will be both more effective and less costly than inaction or delayed action.

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[1] *TEEB — The Economics of Ecosystems and Biodiversity for National and International Policy Makers; Summary: Responding to the Value of Nature*, 2009.

62. Policy responses will include reviewing incentives, identifying options for positive incentives and removing perverse incentives. There are likely to be many opportunities for win-win outcomes, both in direct economic terms and also indirectly, through reducing risks to human health and security, conserving ecosystem services such as water supply and quality or pollination, or retaining social cohesion.

63. Effective implementation of the third objective of the Convention on Biological Diversity, the fair and equitable sharing of benefits arising from the use of genetic resources, will play an important role in capturing the value of biodiversity and providing incentives for its conservation. The current negotiation of an international regime on access to genetic resources and benefit-sharing is expected to be concluded before the meeting at Nagoya, where the Conference of the Parties will adopt the text of a protocol to the Convention. A presentation on the status of the negotiation of the draft protocol on access and benefit-sharing will be made by the Co-Chairs of the Ad Hoc Open-ended Working Group on Access and Benefit-Sharing.

64. The *Global Biodiversity Outlook* provides a clear message that we can no longer see the continued loss of biodiversity as an issue separate from the core concerns of society: to tackle poverty, to improve the health, prosperity and security of present and future generations, and to deal with climate change. Each of those objectives is undermined by current trends in the state of our ecosystems, and each will be greatly strengthened if we finally give biodiversity the priority it desperately needs.

65. In 2008/09, the world's Governments rapidly mobilized hundreds of billions of dollars to prevent the collapse of a financial system whose flimsy foundations took the markets by surprise. Now we have clear warnings of the potential breaking points towards which we are pushing the ecosystems that have shaped our civilizations. For a fraction of the money summoned up instantly to avoid economic melt-down, we can avoid a much more serious and fundamental breakdown in the Earth's life support systems.

66. The critical link between biodiversity, ecosystem services and human well-being is better understood than before, but action to translate such understanding into visible and result-oriented initiatives is still lacking.

67. *Questions for discussion*

- *What is your view as Head of State or Government on the importance to your country of the ecosystem services provided by biodiversity and the risks to your country's well-being and security represented by continuing loss of biodiversity?*
- *How are you able to make the economic values of biodiversity visible to economic actors and policymakers, and effectively integrate those values into decision-making at all levels?*
- *In your country, how can the conservation and sustainable use of biodiversity and the sharing of benefits from the use of genetic resources form part of a green economy that achieves sustainable development and the eradication of poverty?*

Topic IV
Ensuring that measures to meet the objectives of the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change are mutually supportive and reinforcing

68. The pressing issues of biodiversity and climate change are inextricably linked and there needs to be convergence at the international and national levels of efforts to address both sets of issues in a mutually reinforcing manner. There are opportunities for achieving this that cannot be missed, with the meetings of the Conference of the Parties to the Convention on Biological Diversity in Nagoya in 2010 and the Republic of Korea in 2011, and the Cancun[2] meetings in 2010, and with the preparations for the United Nations Conference on Sustainable Development, to be convened in 2012 — "Rio+20". In addition, other biodiversity-related conventions are addressing the effects of climate change on biodiversity and their efforts should be taken into account.

69. Climate change now poses one of the most significant threats to biodiversity. Many impacts of climate change have already been observed, including changes in timing of life events, shifts in the ranges of many species and increased disturbances such as droughts, floods, fire and coral bleaching. This is particularly relevant to migratory species and, therefore, efforts undertaken under the Convention on Migratory Species require further strengthening. The Ad Hoc Technical Expert Group on Biodiversity and Climate Change of the Convention on Biodiversity concluded that climate change will have predominantly adverse impacts on many ecosystems and their services essential for human well-being, with significant adverse economic consequences, including the loss of natural capital, tourism revenue and protection from natural disasters. With regard to species, every 1°C rise in temperature is expected to put an additional 10 per cent of species at increased risk of extinction. Some species and ecosystems are demonstrating some capacity for natural adaptation, but others are already showing negative impacts under current levels of climate change, which are modest compared to most projected future changes. The President of Finland will make a special presentation on the report of the meeting of the Expert Group on Biodiversity and Climate Change, held from 18 to 22 April 2009 in Helsinki.

70. The geographical distribution of species and vegetation types is projected to shift radically due to climate change, with ranges moving from hundreds to thousands of kilometres towards the poles by the end of the 21st century. However, this "natural adaptive" pathway is not open to all species, as a result of reduced mobility linked to natural circumstances and anthropogenic fragmentation. In fact, it is projected that the natural adaptive capacity of many species will be exceeded if certain tipping points are reached. Some of these tipping points may occur at levels of temperature increase well below a mean increase of 2°C above pre-industrial levels.

71. The oceans are a fundamental component of the global carbon cycle. Some 93 per cent of the Earth's carbon dioxide is stored and cycled through the oceans. Out of all the biological carbon (or "green carbon") captured in the world, over half

[2] The sixteenth meeting of the Conference of the Parties to the United Nations Framework Convention on Climate Change and the sixth Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol will be held in Cancun, Mexico from 29 November to 10 December 2010.

(55 per cent), is captured by marine living organisms (hence referred to as "blue carbon"). As such, it is estimated that 25-30 per cent of cumulative anthropogenic carbon dioxide emissions have been absorbed by the oceans. The ocean's vegetated habitats, in particular mangroves, salt marshes and sea grasses, cover less than 0.5 per cent of the seabed. They form the Earth's blue carbon sinks and account for more than 50 per cent, perhaps as much as 71 per cent, of all carbon storage in ocean sediments. They comprise only 0.05 per cent of the plant biomass on land, but rank among the most intense carbon sinks on the planet. The rate of loss of these marine ecosystems is much higher than that of any other ecosystem on the planet; in some instances it is up to four times that of rainforests. Currently, on average, between 2 and 7 per cent of our blue carbon sinks are lost annually, a seven-fold increase compared to only half a century ago.

72. The degradation of important blue carbon sinks is further compounded by the changing ocean chemistry as a result of the increased carbon dioxide absorption, a phenomenon that has come to be known as ocean acidification. Ocean acidity has increased by 30 per cent since the Industrial Revolution, a change that is about 100 times faster than any change in acidity during the past 50 million years or so. Surface level acidity in the oceans is expected to increase significantly during the present century in the absence of substantial and effective efforts to reduce carbon dioxide emissions. The adverse impacts of ocean acidification on marine life, and ultimately their socio-economic effects, are not yet completely understood, but recent findings on the sensitivity of corals to higher acidity and on the weakening of shell formation by shellfish are alarming. Coral reefs, economically and biologically important marine ecosystems already threatened by increasing sea surface temperatures and associated bleaching, will therefore face additional threats from ocean acidification if atmospheric carbon dioxide concentrations continue to rise at current rates.

73. Global responses to climate change include mitigation of the underlying causes of climate change, and adaptation to help humans and natural systems cope better with the impacts of climate change and withstand inevitable changes until mitigation measures are effective. The conservation and sustainable use of biodiversity can be a significant contributing factor for climate change mitigation and adaptation at all levels and in all regions of the world.

74. Sustainable management of land use as well as of marine habitats (blue carbon sinks) offers multiple benefits for meeting the objectives of both the United Nations Framework Convention on Climate Change and the Convention on Biological Diversity. The protection of natural forest and peatland carbon stocks, the sustainable management of forests, the use of native assemblages of species in reforestation and land restoration activities, sustainable wetland/coastal habitats management and sustainable agricultural practices play important roles in limiting increases in atmospheric greenhouse gas concentrations and human-induced climate change.

75. Realizing this potential is, however, contingent on the design and mode of implementation of sustainable management measures. For example, primary forests are generally more carbon dense and biologically diverse than other forest ecosystems, including modified natural forests and plantations. Thus, conservation of existing forests, especially primary forests, prevents future greenhouse gas emissions resulting from the loss of carbon stocks and ensures continued carbon

sequestration, in addition to the biodiversity benefits. The world's protected areas contain around 15 per cent of the terrestrial carbon stock. Effectively managing and expanding protected area networks contributes to climate change mitigation by reducing future greenhouse gas emissions and protecting existing carbon stocks, while at the same time conserving biodiversity.

76. Initial responses to climate change may focus primarily on defensive infrastructure. Such infrastructure responses may often be necessary, but there is a danger of little thought being given to options to achieve the same objectives more sustainably, with reduced costs and more co-benefits, by utilizing the services ecosystems can provide. For example, restoring the flood regulation services provided by wetlands may be an attractive alternative to flood engineering works, while also providing additional benefits from fisheries and recreation. Furthermore, without appropriate impact assessments, investments in hard infrastructure can have unintended negative consequences on biodiversity.

77. Implementing effective ecosystem-based adaptation, however, requires an understanding of the value of ecosystem services and the vulnerability of the species and ecosystems on which such services are based. Maintaining natural and restoring degraded ecosystems, and limiting human-induced climate change result in multiple benefits. The objectives of the three Rio Conventions — the United Nations Framework Convention on Climate Change, the United Nations Convention to Combat Desertification and the Convention on Biological Diversity — and of other biodiversity-related conventions are mutually supportive. Joint work programmes adopted by their Parties would ensure synergies and complementarities, resulting in global environmental benefits.

78. *Questions for discussion*

- *How do you envisage managing biodiversity and ecosystems in your country to contribute to your national climate-change mitigation and adaptation strategies, including REDD+?*[3]
- *How will you promote synergies among the three Rio Conventions and other biodiversity-related conventions at the national level and what is needed at the international level, from their Conferences of the Parties and from the 20-year review of the Rio summit, to support national efforts?*
- *What can be done to ensure that the oceans can continue to function as important blue carbon sinks?*

[3] Reducing Emissions from Deforestation and Forest Degradation (REDD) is an effort to create a financial value for the carbon stored in forests, offering incentives to developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. REDD+ goes beyond deforestation and forest degradation to include the role of conservation, sustainable management of forests and enhancement of forest carbon stocks.

Annex

Proposed format for the high-level meeting

1. The relevant resolutions of the General Assembly call for opening and closing plenary meetings and consecutive thematic panels. Panels will address the following topics:

- Topic I. Framing the post-2010 biodiversity strategy
- Topic II. Ensuring the means for implementing the post-2010 biodiversity strategy
- Topic III. Deriving benefits from biodiversity for development and poverty eradication
- Topic IV. Ensuring that measures to meet the objectives of the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change are mutually supportive and reinforcing

2. The meeting will be chaired by the President of the sixty-fifth session of the General Assembly. The panels will be co-chaired by Heads of State and Government at the invitation of the President of the sixty-fourth session of the General Assembly on the basis of equitable geographical representation. The President of the General Assembly will prepare a summary of the discussions during the high-level meeting for presentation at the closing plenary meeting and for transmission, under his authority, to the tenth meeting of the Conference of the Parties to the Convention on Biological Diversity.

3. The following organization of work is suggested:

9 a.m. to 10 a.m.

Opening plenary meeting

Statement by the President of the sixty-fifth session of the General Assembly

Statement by the Secretary-General

Statement by the Chancellor of Germany (President of the ninth meeting of the Conference of the Parties)

Statement by the Prime Minister of Japan (President of the tenth meeting of the Conference of the Parties)

10 a.m. to 1 p.m.

Panel

Topic I. Framing the post-2010 biodiversity strategy

Topic II. Ensuring the means for implementing the post-2010 biodiversity strategy

3 p.m. to 5 p.m.

Panel

Topic III. Deriving benefits from biodiversity for development and poverty eradication

Topic IV. Ensuring that measures to meet the objectives of the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change are mutually supportive and reinforcing

6 p.m. to 7 p.m.

Closing plenary meeting

(to be held immediately following the closing of the high-level plenary meeting on the Millennium Development Goals)

Presentation of the summary of the high-level meeting and concluding remarks by the President of the General Assembly